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Poster.

VACCINE DEVELOPMENT AND TRIALS : *LEISHMANIA* EXCRETED-SECRETED ANTIGENS AS AMAZING SOURCE OF VACCINE CANDIDATES.

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Summary

Both *Leishmania* promastigote and amastigote forms synthesize complex glycoconjugates which are either displayed on their surface and that have been shown to play important roles in parasite virulence both in the sandfly and the mammalian host, or are excreted-secreted. Due to their location or because they are released into the host environment, these excreted-secreted antigens (ESA) are the first to establish a close contact with the immune system of the host modulating its functions. Previous studies have demonstrated that antigens secreted by microorganisms can quickly bind to class-I and -II molecules of major histocompatibility complex priming CD4+ and CD8+ T lymphocytes. In contrast, somatic antigens, encapsulated by cellular membranes and protected from the antigen processing machinery of eukaryotic cells, are only processed after pathogen destruction, leading to a delay in the T cell stimulation. Antigens released from promastigote forms have been identified as potent modulators of the immune system, having a crucial role in promoting the establishment and maintenance of the infection by interfering in the activation of effector mechanisms, such as the microbicidal activity of macrophages and cytokine production. Moreover, interesting studies using released antigens from *Leishmania* sp. as a model for the development of affordable vaccines have been conducted. The above considerations support the hypothesis that antigens released by *Leishmania* species may have potential to induce host protection and be used for vaccine development against leishmaniasis. The present work exposes our study strategy of *Leishmania* ESA, their production and their tremendous potential either as vaccine candidate of first generation and as a rich pool of other vaccine generations. From the successfully development of a completely defined serum-free medium that readily supports the continuous in vitro cultivation of promastigotes of most *Leishmania* species, we have been access to antigens naturally excreted-secreted by parasites, thus opening up a great opportunity to easily study them. The biological potential of these ESA is showed by our studies using of these naturally excreted-secreted antigens as a vaccine candidate of first generation, inducing a long-lasting and strong protective effect against canine visceral leishmaniasis, and as a rich source of major immunogenic antigens, conducting to new prospects to gain access to new vaccine generations for human use.